CDF Operations Report

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All Experimenters Meeting

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Detector work this week

- XFT (track trigger) upgrade
  - Electronics repairs in the collision hall
  - Tested firmware and readout of boards which link stereo track segments
  - Tested lower thresholds for tracking chamber for noise (may need lower thresholds for XFT efficiency at high lum)
- Work on the muon detectors
- Replaced a few tracking chamber TDCs
- Diamond detector for beam loss monitoring repaired and reinstalled
- CDF beam halo / abort counter work (all new abort counters are installed in Tevatron tunnel)

- Short access Friday to replace silicon fiber interface board

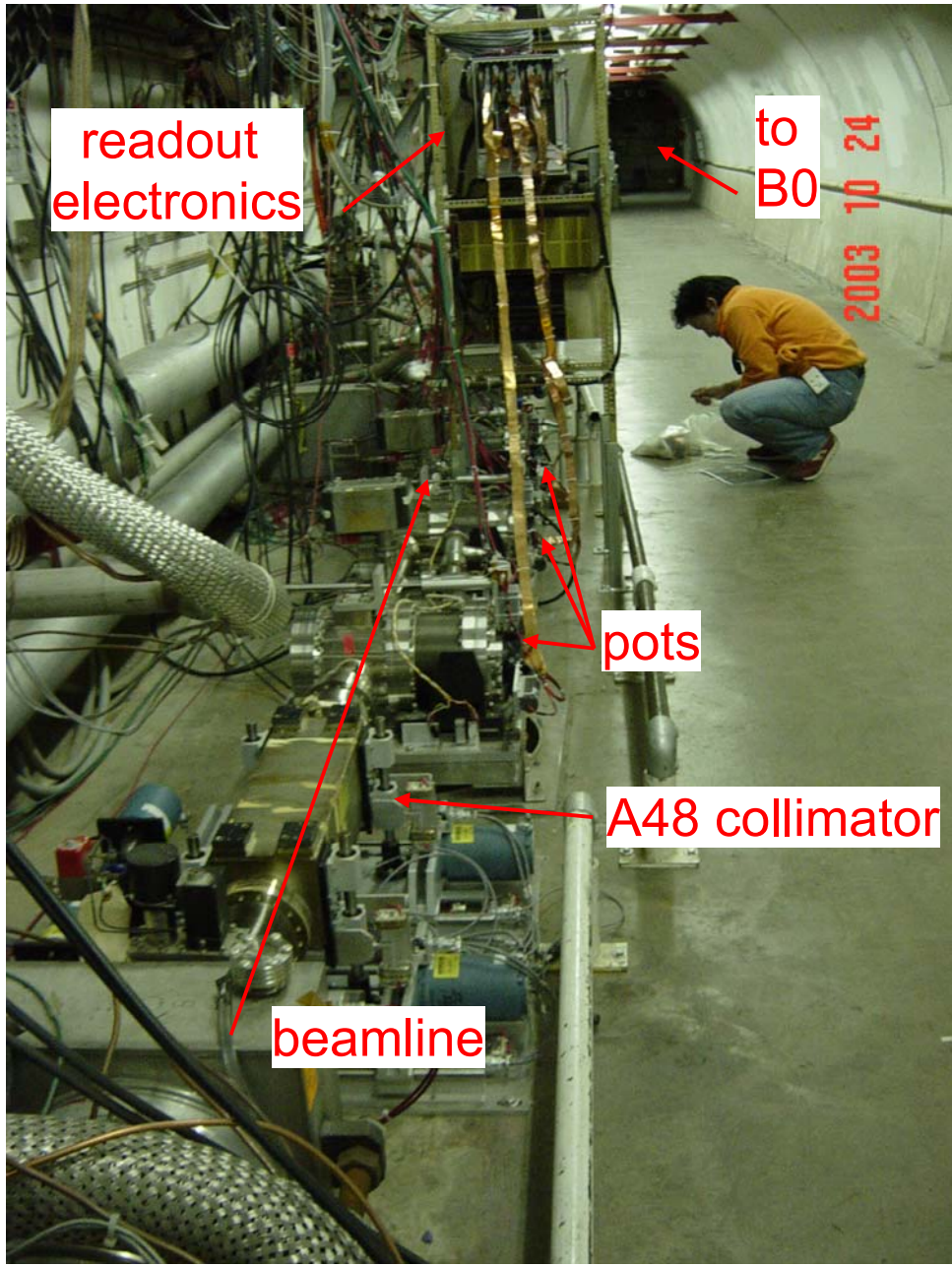
Store Summary

- Store 4612:
  - Muon TDC readout problems – replaced TDCs
  - Calorimeter trigger rates – found and replaced problem board
  - Dead shower maximum detector region fixed by changing HV
  - Trigger table tests
  - Upgrade Silicon Vertex Trigger tests
- Store 4614: smooth sailing!

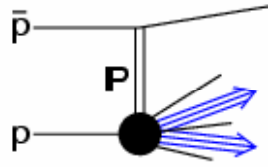
Date	Store	Lum (E30)	Delivered (pb^{-1})	To tape (pb^{-1})	Efficiency
F 1/27	4612	57	2.1	0.85	41%
Su 1/29	4614	75	2.8	2.5	90%
Total			**4.9**	**3.4**	**69%**

Low Luminosity Store

- During the March shutdown, the CDF Roman pots will be removed to make room for an additional collimator at A48 to further protect the silicon detector from abort kicker prefires
- In order to complete most of the CDF diffractive physics program, we asked for a store with luminosity low enough to guarantee no more than one interaction per bunch crossing ($\mathcal{L}$~$10^{30}s^{-1}cm^{-2}$)
- Thanks to AD for agreeing to provide it today!

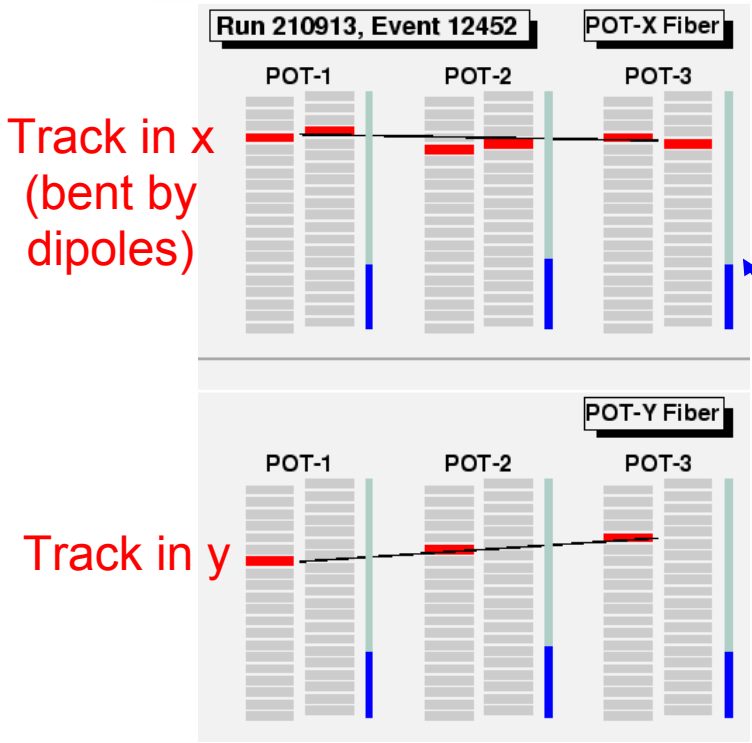


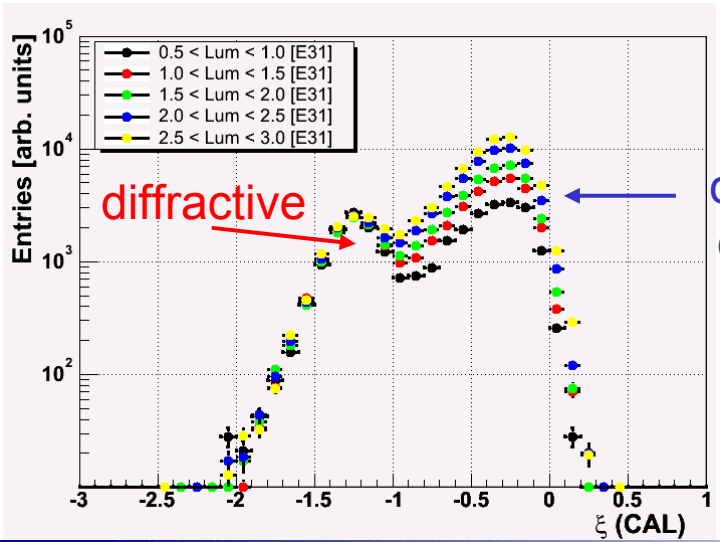
Diffractive dijet production



- Better understanding of diffractive pbar momentum loss (ξ) distribution
  - determined by Roman-pot fiber tracking (dipoles bend pbar)
  - determined by summing E_T in calorimeters

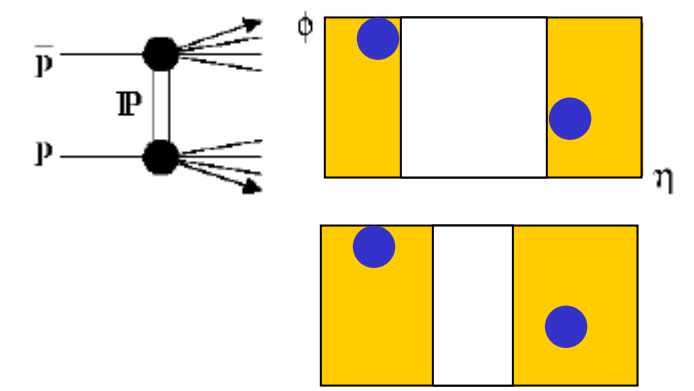
    $\xi = \Sigma_i E_{Ti} e^{-\eta_i}/\sqrt{s}$
- Subtraction of background due to non-diffractive dijet production in same bunch crossing as soft diffractive interaction (greatly reduced at $L \sim 1 \times 10^{30} cm^{-2} s^{-1}$)



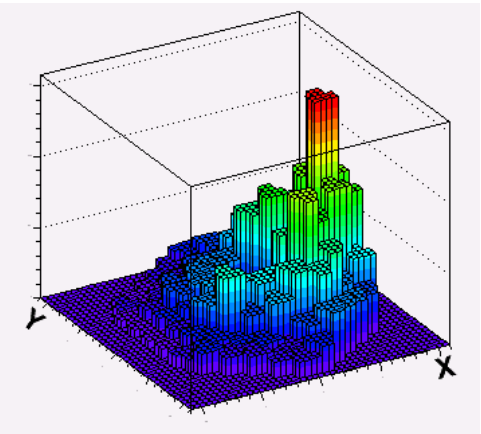


Rapidity gaps between jets

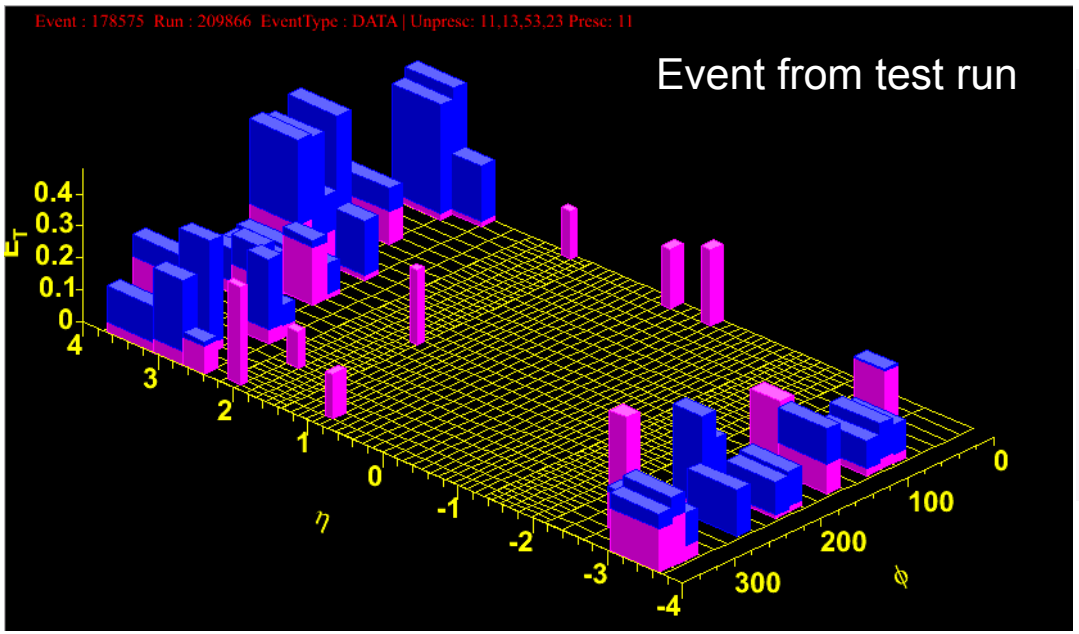
- Does the gap reach all the way to the jets?

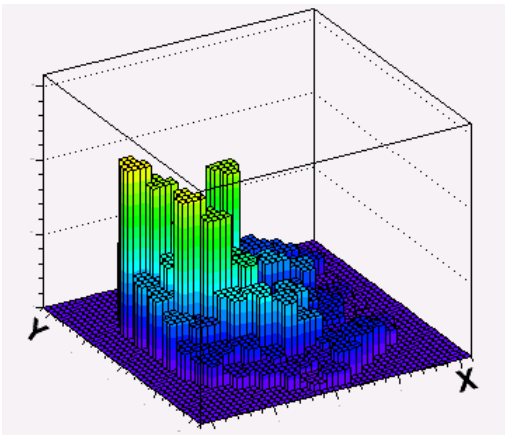


- Trigger on low multiplicity in central detector and large E_T (jets) in miniplugs ($3.5<|\eta|<5$)
- Look in plug calorimeter



East Miniplug





West Miniplug